



STATE OF MAINE  
Department of Environmental Protection

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**RECORD HILL WIND PROJECT (RHW)  
DEP Application #L-24441-24-A-N/L-24441-TF-B-N**

The following questions and requests are from the Department's meeting on February 18, 2009 and subsequent submissions as of May 1, 2009. Any questions that are received after this date will be addressed in the Department's licensing decision. The questions and requests that have been submitted are divided by topic and are in no particular order. This document will be posted on DEP's website and distributed to interested parties. Names are included next to each question/request for referencing purposes.

WILDLIFE

There is a Bald Eagle rookery on French Island. There needs to be a thorough study of eagle behavior of Roxbury Pond to determine what extent the eagles use Record Hill ridge as an essential part of their habitat. RHW must do a further study on the bald eagle population or they should apply for a taking permit. – Colleen Martineau

***The Maine Department of Inland Fisheries and Wildlife (MDIFW) stated that its agency has monitored nesting of bald eagles at French Island since 1998. The nest and surrounding ¼ mile radius is designated an Essential Habitat under the Maine Endangered Species Act to enable reviews of projects which might significantly alter or unreasonably harm the immediate nest vicinity. That regulation has been key to mitigating potential disturbances near nesting eagles and bolstering species recovery.***

***A variety of landscape features can harm, injure or even kill eagles at greater distances than the ¼-mile radius of the Essential Habitat zone. The proposed windpower facility at Record Hill is a potential risk factor. Emerging policies under the federal Bald Eagle – Golden Eagle Act (administered by the U.S. Fish and Wildlife Service) advise windpower projects to examine national management guidelines and potential liability for prohibited "take" of eagles. For consistent flagging of potential concerns, USFWS alerts windpower applicants within 3 miles of eagle nests that special scrutiny is advised. The allotted 3 mile area is not a prohibition zone but a sphere of potential concern depending on site-specific circumstances. MDIFW does not have authority to interpret this policy or statute.***

***Most bald eagle activity is along the shores of lakes, rivers, streams and coastal waters; although, ridgelines like Record Hill do create updrafts favorable for soaring flights. The applicant has conducted routine monitoring of raptor activity (including eagles) during fall and spring. Results from these studies showed relatively low of the ridgeline by bald eagles during the surveys. However, additional local eagle-specific behavior studies will likely be recommended for post-construction monitoring. Some proposed projects are now undertaking more focused surveillance of nesting eagles to assure that foraging flights, activities of fledgling eaglets, etc. are not focused at proposed turbine sites.***

How will migratory birds be affected? – Linda Kuras

**MDIFW stated that avian migration through Maine (and theoretically bat migration as well) is fairly diffuse and is typically referred to as “broad front” migration. In mountainous regions, high peaks such as those over 3,000 to 4,000 feet may influence bird movement locally by diverting passage of some individuals around, rather than over summits. Such behavior has not been seen for smaller mountains and ridgelines such as those associated with the Record Hill Wind Project. Studies conducted by the applicant (as well as studies done for many other projects in Maine) have shown that birds typically migrate well above the “rotor-swept zone.” The challenge of MDIFW is to determine what level of avian mortality is expected, and more importantly what level of mortality is acceptable. The post-construction studies from other operating windpower projects in Maine have not shown high mortality rates for either birds or bats. Post-construction mortality studies at this site are necessary and will aid in the effort to answer this question, and perhaps guide any mitigation strategy if necessary.**

Creeper, a freshwater mussel, is present in the Ellis River in the Andover area. The outlet to Roxbury Pond is the start of the Ellis River. This should be considered. – Ron Dube

**MDIFW stated that the Creeper is a species of freshwater mussel listed as a species of special concern in Maine. Creepers are usually found in clean, flowing streams and rivers. Sometimes, Creepers are found in impounded stretches, and lake outlets which can be productive habitats for this species. The creeper can tolerate a range of flow conditions, but is rarely found in high-gradient streams of mountainous regions. These mussels are listed as a species of special concern because they are rarely abundant where they occur and are vulnerable to major disturbances and degradations to their habitats. Some of the activities associated with the construction of the Record Hill Wind Project will occur within the watershed that Creepers are known to occur. The applicant has agreed to comply with DEP Best Management Practices for erosion and sediment control and road construction. As long as those BMPs are implemented MDIFW does not anticipate any negative impacts to this species.**

What will the loon mortality be associated with the Record Hill Wind Project? –Dr. Monique Aniel

**Common loons (*Gavia immer*) are protected by state and federal laws that prohibit the harassment of wildlife; however, they are not classified as a rare, threatened, or endangered avian species. MDIFW stated that there is a potential risk that loons may collide with a turbine associated with the Record Hill Wind Project. However, MDIFW believes that this risk is low since most of the loon flights would occur during daylight hours when they could see the structures. Preconstruction studies done by the applicant for this project did not show loons using the ridgeline at all. Similarly, none of the studies conducted at existing wind facilities in Maine have shown mortality events with loons. It is not anticipated that the local loon population, or migrating loons will be adversely impacted by the Record Hill Wind Project.**

#### STORMWATER/EROSION

What will prevent erosion like that at Kibby Mtn. from happening at Record Hill? – Lauri Sibulkin

**The Division of Watershed Management (DWM) reviews the stormwater and erosion aspect of the proposed project and reviewed this question. DWM commented that reports**

*from the third party inspector for the Kibby Mountain Project have indicated that the major erosion control issues resulted from the logging and clearing practices on the site. These factors were not under the control of the developer of the Wind Power project but activities undertaken by the Land Owner. For the Record Hill Wind Project it is anticipated that a third party inspector will make weekly visits to that site and report on the erosion and sedimentation control efforts, problems encountered during their inspections, and corrective measures taken. This is in addition to the contractors own efforts at compliance and additional visits from DEP staff and along with the applicant's own reviewed and approved erosion and sedimentation control plan as guidance to the level of effort necessary to conduct the project.*

## SOILS

The hydric soils identified by the soil scientist should be cross checked against the wetlands finding to make sure all wetland areas have been identified.

There is no "Soil Conditions Summary Table" provided in the application.

All soil samples have missing slope and thickness of organic horizon data.

Soil information lacks ground surface elevation, soil series/phase name, a check off box for hydric and non-hydric, and a box for hydrologic soil group.

Some explorations lack soil color information.

Some explorations have incorrect soils named.

-Steve Thurston

***The DEP has brought this issue to the applicant's attention. The applicant is currently reviewing their soil survey methodology and geotechnical report. Revisions to soils will be reviewed by a geologist with the DEP's Division of Environmental Assessment.***

## NOISE

Who will be liable for medical costs from effects from noise and shadow flicker? – Linda Kuras

***The applicant stated that because no noise or shadow flicker effects are expected to occur off the property of the project's landowner, no plans for medical liability are anticipated.***

Will the noise generated from the proposed project over Roxbury Pond create a canyon effect? – Linda Kuras

Have any studies been conducted on the echo of the pond? – Dan Grenier

***The sound level study completed by the applicant, as required by Chapter 375.10 of the Site Location of Development Act, accounts for the effects of sound propagation off the pond and mountain surfaces within the surrounding area of the proposed project site. The sound level study was reviewed by a 3<sup>rd</sup> party peer review source.***

Prior to implementation of any wind development, an assessment should be made to address the proper distance between turbines and dwellings to make sure no one suffers any ill effect, no matter what pre-existing medical condition may be present. – Dr. Monique Aniel

***The sound level study submitted by the applicant also included nine nearby sensitive receiver points (protected locations with most restrictive sound level limits and other points of interest for local landowners). These are listed with site descriptions, approximate distances***

**from nearest wind turbine, and hourly limits/ limit basis. Note: Protected locations are defined at Chapter 375.10 as any location, accessible by foot, on a parcel of land containing a residence or planned residence or approved subdivision, house of worship, academic school, college, library, duly licensed hospital or nursing home near the development site at a time a Site Law application is submitted.**

The project will generate low frequency noise which will create negative health effects. – Linda Kuras  
DEP needs to determine the low frequency and determine the appropriate setbacks. – Dr. Albert Aniel

**Chapter 375 noise standards of the Site Location of Development Act were developed through a stakeholder process to conform to the commonly accepted (A-weighting scale, also known as dBA) industry standards for sound level measurement. The dBA scale is widely used in noise ordinances, equipment specification, and sound control regulation.**

**The Department's 3<sup>rd</sup> party noise consultant commented that infrasound, sonic frequencies less than 20 hertz (Hz), have been widely accepted to be of no concern below the common human perception threshold of 85-90 dBG for non-pure tone sounds. There is insufficient, broadly accepted evidence to conclude otherwise. Numerous national infrasound standards limit industrial facilities, impact equipment and jet engines, but wind turbine infrasound levels fall far below these standards.**

**Wind turbines rotating under conditions necessary for power production produce a measurable broadband (lower frequencies) amplitude modulation of sound ("swoosh" and/or "thump") at  $\pm 1$  Hz, which is not the same as infrasound.**

**The introduction of C-weighting for the assessment of wind turbine sound is preliminary and unrefined on a broad basis. Current international wind turbine acoustic output standards do not require dBC or dBG rating.**

Noise issues from the project will generate medical problems. DEP's review should include comments from the Department of Health. – Dr. Albert Aniel

**The Department solicited comments from the Maine Center for Disease Control, a division of the Maine Department of Health & Human Services regarding wind turbine neuro-acoustical issues. Comments from MCDC will be conveyed in the Commissioner's licensing decision.**

What did DEP do to remedy noise/health issues from Mars Hill? – Dr. Albert Aniel

**The Mars Hill project was determined to be in compliance with the 50 dBA requirement as authorized in its permit. Due to this, no mitigation for noise/health issues was deemed to be necessary.**

What does DEP propose to do so that it does not occur with future ventures? – Dr. Albert Aniel

**All proposed projects applying pursuant to the Site Location of Development Act are required to meet the noise standards as outlined in Chapter 375.10. As a condition of approval, most wind energy developments will be required to implement a sound level compliance assessment plan. The terms of this plan would be determined by the Department with assistance provided by the Department's 3<sup>rd</sup> party noise consultant.**

WHO standards recommend that no greater an increase in 5db during the day and 3 db at night occur. The rural area sound level at night is down to 20 db. Why would you subject citizens to a much higher baseline level? – Dr. Albert Aniel



***According to Chapter 375.10 of the Site Location of Development Act, when a proposed development is to be located in an area where the daytime predevelopment ambient hourly sound level at a protected location is equal to or less than 45 dBA and/or the nighttime predevelopment ambient hourly sound level at a protected location is equal to or less than 35 dBA, the hourly sound levels resulting from routine operation of the development shall not exceed 55 dBA between 7:00am and 7:00pm and 45 dBA between 7:00pm and 7:00am at that protected location. Any divergence from the State's noise standard to determine whether a project meets permitting requirements would require legislative approval.***

Maine's noise standards should be upgraded to WHO standards and French Academy of Medicine standards. – Dr. Albert Aniel

***As stated above, any change in Chapter 375.10 would require approval from the State's legislature.***

According to the Maine State Planning Office's Technical Bulletin on Noise, 20 db is the sound level listed for "quiet house interior or rural nighttime". Experience has shown that the Roxbury Pond area accurately fits the description of "rural nighttime" and therefore a db level of 20 can be relied on with confidence. – Steve Thurston

***The Department is required to use Chapter 375.10 noise standards of the Site Location of Development Act when reviewing a proposed development. DEP does not have authority to deviate from these standards and use other types of standards such as guidance from the Maine State Planning Office or other state or international noise standards.***

The RHW noise study erroneously predicts that the 45db nighttime limit will not reach homes in Roxbury. – Steve Thurston

***The DEP's 3<sup>rd</sup> party noise consultant will consider this aspect during his review of the applicant's sound level study.***

ADDITIONAL SUBMITTALS REGARDING VARIOUS ASPECTS OF NOISE WERE SUBMITTED TO THE DEPARTMENT. HOWEVER, DUE TO THEIR COMPLEXITY, THESE SUBMITTALS ARE NOT DESCRIBED IN LENGTH HERE. HOWEVER, THEY WILL BE DIRECTLY ADDRESSED AND REFERRED TO IN THE DEPARTMENT'S DECISION.

#### TANGIBLE BENEFITS/ECONOMIC FEASIBILITY

If 1 or more of these turbines fail and don't produce the previous 3 months KW average, is the developer still obligated to pay the \$50./mo electrical fee to the residents of Roxbury? – Eric Roderick

***The applicant stated that under the proposed agreement with the Town of Roxbury, the developer is required to pay as long as the project is in "commercial operation", which is defined as 65% of the power generated during the previous 3 years. Thus, the applicant anticipates that the loss of one or more turbines should not affect the free electricity offer.***

There is no basis for the free electricity offer to be honored by RHW or expected by the town because the voters did not say they wanted it. – Steve Thurston

***The applicant stated that the proposed project's energy assistance plan is termed as a tangible benefit of the project. Because tangible benefits are a licensing criterion under the Site Location of Development Act for grid-scale wind energy developments, the energy assistance plan will be reviewed by the Department.***

Some condition on minimum tax payments (to protect the town from a loss of promised property tax payments on an appeal to the state property tax appeals board) should be included in the DEP's decision on this project. – Steve Thurston

***The aspect of tax payments is under jurisdiction of municipalities. According to the applicant, the Town of Roxbury has not addressed the question of minimum payments, because the town does not anticipate a likely scenario for this to occur.***

The DEP lacks the ability to fairly judge the statements made by RHW about the project's supposed benefits. – Steve Thurston

***Pursuant to 34-M.R.S.A. § 3454, the Department has the discretionary authority to review and make finding regarding tangible benefits. The tangible benefits section of an application is reviewed by a group of members from the Maine State Planning Office, Maine Department of Labor, and the Maine Public Utilities Commission. This group has been elected by their agencies as experts to review proposed tangible benefits. The Department will make a finding on tangible benefits based on information in the record and this group's review.***

#### TITLE, RIGHT, OR INTEREST

Without the necessary transmission infrastructure to allow the grid to safely absorb the project's output, the project does not have sufficient title, right, or interest to move forward. – Steve Thurston

***The applicant submitted a wind energy facility ground lease from Bayroot LLC, the property owner, for the proposed project and a quit claim deed for the parcel in the name of Bayroot, LLC. According to Chapter 2, Rules Concerning the Processing of Applications and Other Administrative Matters, an applicant shall demonstrate sufficient title, right, or interest (TRI) in all of the property proposed for development or use prior to acceptance of an application for processing and must maintain TRI throughout the application processing period.***

***Any construction activities outside of the scope of the project which includes but is not limited to Central Maine Power Company (CMP) transmission line upgrades must be handled via a separate permit, if necessary. CMP must demonstrate TRI if transmission line upgrades are proposed in an application.***

***The applicant stated that safety, reliability, and scheduling of electrical resources in Maine are coordinated by the Independent System Operator of New England (ISO-NE). Interconnection approval requires an engineering study on project feasibility and system impact. RHW has contacted ISO-NE and is currently working with them on a preparing a study.***

#### ELECTRICAL INFRASTRUCTURE

Has CMP confirmed that transmission upgrades from Rumford to Roxbury will be made at now cost to RHW, or that they will build the transmission line if RHW pays for it? – Steve Thurston

***The applicant stated that they have signed an Engineering and Procurement agreement with CMP. Under this agreement, all costs for upgrades to the transmission line between Roxbury and Rumford will be paid by RHW. This is in keeping with the New England transmission system regulations that stipulate that costs for transmission upgrades required to connect a new generator by borne by the generator.***

#### TURBINE/MANUFACTURING SPECIFICATIONS

How many RPMs will the blades turn at a wind speed of 30 mph? – Leo Turner

What is the tip speed of the turbine blades at 30 mph? – Leo Turner

How many rotations will each turbine make per second and per minute, and will they rotate in succession? – Kelly Sastamoine

***The applicant stated that when the wind is blowing at approximately 30 mph, the maximum number of RPMs the turbine would exhibit is 15.5 rpm (3.9 seconds per rotation). This equals a tip speed of about 75.8 m/s (169 mph).***

Are the blades reflective? – Kelly Sastamoine

What are the candelas per square meter? – Kelly Sastamoine

***The applicant stated that turbine blades are coated with an anti-glare finish, which is designed to minimize reflections. The turbines will be painted with a semi-matte paint conforming to ISO 2813: Paints and varnishes – Determination of specular gloss of non-metallic paint films at 20 degrees, 60 degrees, and 86 degrees.***

***Candelas are a unit of brightness. The applicant stated that the semi-matte paint coating on the blades will minimize the brightness of reflections from the blades.***

Considering the reflection off the pond, what will the mark-space ratio be, and what is the percentage of visual cortex involved? – Kelly Sastamoine

***Mark space ratio describes the ratio of time a square wave signal spends in the high state as compared with the low state. The applicant stated that when looking at a single spot within the rotor disk, the blades will be within that spot during the course of a single revolution. The blade thickness varies along the length of the blade and the pitch angle of the blade varies based upon wind speed. The mark space ratio would also depend on the angle of the disc relative to the observer. Rotor solidity is a measurement that describes what portion of the swept area of the rotor is covered by the blades. Typical rotor solidity for wind turbines ranges from 5% to 7%.***

Has the hardness of the turbines been tested in Maine's high altitudes? – Lauri Sibulkin

***The applicant stated that the proposed turbines are designed and independently certified for suitability in conditions similar to those on the Record Hill ridgeline. The Clipper machine has been certified to operate in conditions as low as -30 °C. Below this temperature, the turbine is designed to shut down until temperatures return to safe operating conditions.***

In regards to turbine safety, what means of egress is required in case of a fire in the nacelle? – Steve Thurston

**Egress from the nacelle can be made from an opening in the bottom of the nacelle to the ladder inside the tower or via a door in the top of the nacelle.**

#### PROJECT DESIGN/NEED

Can 2 to 3 turbines be removed from the closest residence to the project site? – Lisa Hodgkins

**The applicant stated that because the proposed project needs 22 turbines to be viable, reducing the number of turbines would be impracticable. The developer will manage the turbines to ensure compliance with state noise standards.**

In consideration of noise protections, the applicant could use turbines that are capable of being controlled by remote sensors that will continuously measure wind speeds at Roxbury Pond and slow or stop the turbines when wind speed at the surface of the pond decreases to the point at which turbine noise will exceed background by more than 5db. Nordex is one manufacturer that offers such a control system. – Steve Thurston

**The applicant stated that the proposed turbines are not equipped with this type of control. Nordex turbines may have a louder sound than the proposed turbines.**

**Noise is a licensing criterion under the Site Location of Development Act which will be reviewed by the Department.**

#### DECOMMISSIONING PLAN

Who will restore the site if the project is decommissioned? – Lauri Sibulkin

**Decommissioning will be completed at the expense of the applicant (project owner). The applicant has committed as required by the Department to set aside funds specifically for the purpose of decommissioning. The decommissioning fund will be fully funded at least 5 years prior to the expected end of useful life of the equipment.**

What is the meaning of "Recycling and reclamation \$-113,658.42" as stated on appendix 29.1? – Ron Dube

Request that RHW be required to fully fund a bankruptcy remote fund adequate to fully decommission the project without reducing the fund for any salvage value and that the fund shall be fully funded upon the commencement of operation (similar to the decision issued to the Deerfield Wind, Vermont project). – Steve Thurston

**As a requirement of submittal of a Site Location of Development Act application, the applicant must estimate and provide for the total cost of decommissioning less salvage value of the equipment. The applicant stated that the decommissioning plan (including work activities and cost estimates) was provided by Reed & Reed, Inc. and meets this requirement.**

#### TRANSPORTATION

There is no plan in the application showing which roads may be used for bringing tower sections and blades to the site. – Steve Thurston

**Methods of transport for wind turbines are determined by the turbine manufacturer with approval by the Maine Department of Transportation. The applicant stated that the route of**



**delivery will be identified once a turbine delivery schedule and port of delivery have been finalized.**

### SETBACKS

What will happen to people within setbacks? – Anthony DeSalle

**The applicant stated that there are no residents within defined town or state setbacks. The property lines of two abutting undeveloped parcels are within the Department's public safety setback area of 1.5 times the turbine height. The applicant obtained waivers of this setback from both landowners.**

### VISUAL CHARACTERISTICS

Record Hill turbines will be seen from Whitecap Mountain. – Brad Blake

**The nearest turbine to the summit of Whitecap Mountain is anticipated to be about 4.5 miles. The applicant acknowledged that some turbines may be visible from this mountain.**

The Maine State Planning Office never looked at Roxbury Pond when it developed its report on Maine's Finest Lakes. DEP should evaluate the pond. – Tom Currivan  
(Expanding on the above concern...) DEP should also evaluate Little Ellis Pond and Garland Pond. – Eric Roderick

**Pursuant to 34-M.R.S.A. § 3451 and 3452, the applicant conducted a visual impact analysis on all scenic resources of state and national significance. This analysis included discussion of potential impact to the 66 great ponds identified in a report entitled "Maine's Finest Lakes" published by the Maine State Planning Office (SPO).**

**Because this report was created by the SPO, an evaluation of Roxbury Pond, Little Ellis Pond, and Garland Pond must be conducted by SPO with approval of findings by the Maine State Legislature. The Department does not have authority to evaluate great pond nor make revisions to SPO's report.**

**The Department solicited comments from SPO regarding the any possibility to re-evaluate the great ponds and inclusion in their report.**

**SPO commented that 35-A M.R.S. §3451(9) defines "scenic resources of state or national significance" as including a "great pond that is one of the 66 great ponds located in the State's organized area identified as having outstanding or significant scenic quality in the 'Maine's Finest Lakes' study published by the Executive Department, State Planning Office in October 1989."**

**The Maine Finest lakes study involved assessment of great ponds of 10 acres or more in size for a number of different natural resources-related values, one of which was scenic quality. As stated in Maine's Finest Lakes: The Results of the Maine Lakes Study (SPO, October, 1989) ("Report"), the study report referenced by the above definition, the Report's anticipated potential uses included statewide planning and DEP land use permit review.**

**In its findings, the Report indicates that there are 66 lakes identified as having "outstanding" or "significant" scenic quality. The list of lakes identified as having significant or outstanding scenic quality is different than the shorter list of "outstanding lakes of the organized townships" (the overall "finest" lakes as assessed by this study) described in the Report. These "finest" lakes are those that under the study methodology detailed in the Report were "judged to have cumulative resource values that are of statewide significance." As may be seen from review of Appendix D, not all of the lakes identified as having**

*outstanding or significant scenic quality were judged to have cumulative resource values that are of statewide significance and thus not all are included among the "outstanding lakes of the organized townships."*

*Roxbury Pond, Little Ellis Pond, and Garland Pond are not among the lakes "identified as having outstanding or significant scenic quality" in Appendix D of the Report. For each lake studied, the assessment results detailed in Appendix D indicate whether the lake was found to be "significant" or "outstanding" for each category assessed. "A blank indicates either that the lake did not meet the study's minimum standards for that particular resource or there was inadequate information to draw conclusions."*

*The Report indicates that the methodology used in assessing each lake's scenic quality. As explained in the Report, due to budget limitations, the study methodology limited site visits to those lakes that met applicable screening criteria. The methodology's evaluation process states that only those lakes that met the "minimum standards" regarding topographical and landscape features would be evaluated in the field by visiting the lake in a float plane.*

*Work regarding the Maine lakes study has been completed. A number of years ago, the Legislature eliminated SPO's Critical Areas Program, for which the Report was prepared. The Program's functions regarding plant and animal habitat were basically merged into the work of the Department of Conservation's Maine Natural Areas Program and Department of Inland Fisheries and Wildlife, respectively, while functions regarding physical features, such as waterfalls and unique geologic areas, and scenic qualities were not. SPO does not have any on-going, current lakes assessment program or initiative. SPO has no legislative direction or funding or other plans to support re-evaluation of the relative scenic or other qualities of Roxbury Pond or other great ponds.*

*Further assessment of the scenic quality of the ponds and subsequent amendment of the Report to identify the ponds as having "outstanding or significant scenic quality" would not alter the definition of "scenic resources of state or national significance." Change of that definition would require legislative action to amend the statute.*

The proposed project will be visible from the Appalachian Trail and Tumbledown Mountain. – Eric Roderick

*As discussed above, the applicant conducted a visual impact analysis. This analysis pursuant to 34-A M.R.S.A. §§ 3451(9) and 3457 identified all scenic viewpoints located on state public reserved land or on a trail that is used exclusively for pedestrian use (e.g. the Appalachian Trail) as locations of scenic significance. Visual impacts to all such viewpoints within eight miles of a potential wind energy development must be analyzed. Based on results of the analysis, the applicant identified one viewpoint from which the project will be visible along the Appalachian Trail at distances less than eight miles (Old Blue Mountain viewpoint). That location is approximately 7.8 miles away and represents a short section of trail. Portions of the project will be visible from the summit of Tumbledown Mountain at a distance of approximately six miles, but portions of that view will be blocked by West and Walker Peaks. From the area above the tarn (mountain lake) on Tumbledown, views of the project will be entirely blocked by intervening topography.*

Will the distance from the turbines be more or less than 100 times the hub height from view? – Kelly Sastamoine

*The applicant stated that the hub height for the turbines selected for the proposed project is 80 meters. One hundred times this height is 8,000 meters, or approximately 5 miles. Turbines can be visible at this distance when views are unobstructed. The nearest public*

**viewpoints of state or national significance that offer occasional unobstructed views of the project are located 5.8 and 7.8 miles away from the project at Tumbledown Mountain and Old Blue Mountain, respectively.**

#### SHADOW FLICKER

What is the anticipated frequency of shadow flicker from the proposed project? - Kelly Sastamoine

What is the intensity of light & dark between the turbine blades? – Kelly Sastamoine

***The applicant stated that this difference depends on specific weather conditions and is stated as such in the Shadow Flicker Analysis in the application. However, the effect of shadow flicker will dissipate before reaching any residences in the vicinity of the project, no matter the weather condition.***

Many autistic children are prone to photosynthetic seizures. Please address the potential health effects to autistic children from the shadow flicker effect as it reflects on Roxbury Pond. – Kelly Sastamoine

What does the reflection of shadow flicker do to autistic children? – Anthony DeSalle

***The applicant researched this aspect with the National Academy of Sciences and the Epilepsy Foundation. According to a publication issued by the National Academy of Sciences, entitled "Environmental Impacts of Wind-Energy Projects" (2007): "Flicker frequency due to a turbine is on the order of the rotor frequency (i.e., 0.6-1.0 Hz), which is harmless to humans." According to the Epilepsy Foundation, "only frequencies above 10 Hz are likely to cause epileptic seizures. (As a reference, frequencies of strobe lights used in discotheques are higher than 3 Hz but lower than 10 Hz.)."***

Who will be liable for medical costs from effects from noise and shadow flicker? – Linda Kuras

***The applicant stated that because no noise or shadow flicker effects are expected to occur off the property of the project's landowner, no plans for medical liability are anticipated.***

#### EASEMENTS

There have been no easements recorded in the town records to indicate that agreements have been reached with landowners of protected properties. The letter from David Hodgkins is not legally binding. – Steve Thurston

***The area of proposed development is owned by a single landowner, Bayroot, LLC. As stated above, a copy of the lease agreement between that landowner and the applicant was submitted in the application. Two undeveloped abutting parcels are located within the DEP's default public safety setback of 1.5 times the turbine height. The applicant obtained waivers of the public safety setback from both landowners.***

Are there any landowner agreements that allow nighttime noise levels to be exceeded or allow reduced setbacks to property lines? – Steve Thurston

***The applicant does not have and does not intend to seek easements of the standard DEP noise thresholds set forth in Chapter 375.10 of the Site Location of Development Act.***

DEPARTMENT PROCEDURAL QUESTIONS (The first 5 questions were verbally addressed by DEP staff at the public meeting, but they are repeated here to ensure that all involved parties are aware of the questions and answers.)

Has DEP denied any windpower applications? – Christine Dube

***As of May 2009, the Department received, reviewed, and issued permits to two windpower developments, Mars Hill and Rollins Wind Project (Lincoln). Both projects were approved. The Record Hill Wind Project is the third large-scale wind project to be submitted for review with the Department.***

Will answers be posted on DEP's website? – Christine Dube

**Yes.**

What was the date that the 5 new Site Location of Development supplemental requirements for wind energy developments were enacted? – Christine Dube

***The second regular session of the 123<sup>rd</sup> Legislature approved five supplemental licensing criteria for wind energy developments. Public Law, Chapter 661, which outlines the criteria, became effective on April 18, 2008.***

Who will make the final decision on the application? Is there a review team and who is on this review team? – Christine Dube

***A final decision on any application is issued by the Commissioner of the Department. The proposed project and other developments similar in nature are reviewed by the Division of Watershed Management, the Division of Environmental Assessment, the Bureau of Remediation and Waste Management, Maine Dept. of Inland Fisheries and Wildlife, Dept. of Health and Human Services- Division of Environmental Health, Maine Public Utilities Commission, Maine Department of Labor, Maine State Planning Office, Maine Historic Preservation Commission, US Army Corps of Engineers, and an outside peer review consultant.***

What new regulations exist as a result of Mars Hill? – Dr. Albert Aniel

***The second regular session of the 123<sup>rd</sup> Legislature approved five supplemental licensing criteria for wind energy developments. Public Law, Chapter 661, which outlines the criteria, became effective on April 18, 2008. The additional criteria applicable to wind energy developments are Shadow Flicker, Public Safety, Tangible Benefits, Decommissioning Plan, and Generating Facility-Visual Quality and Scenic Character.***

DEP personnel should spend a weekend at my camp on Roxbury Pond, walk on the ice, and look around. – Ron Dube

***Department staff visited the project site on October 24, 2008. On June 2, 2009, Department staff visited the project site and the community surrounding Roxbury Pond.***



### PROPERTY LAW

What is the mechanism of compensation for loss of property values? – Dr. Monique Aniel

Will the property owners on Roxbury and Garland Pond and the Byron Flats be compensated in any way for the reduced property values and the visual impacts generated by this project? – Eric Roderick

***The Department does not have jurisdiction over issues of property law. Therefore, the Department does not have authority to use property law as a basis for determining if permitting requirements have or have not been satisfied for any particular project.***

### RADIO INTERFERENCE

One of the dishes of the Andover Earth Station is pointed at in the direction of the turbines on Partridge Peak. The owners of the Earth Station should be consulted about the possible impacts from turbines at this site. – Steve Thurston

Has consideration been given to the proposed towers on the Twin Mountains and its potential interference with the satellite station in Andover? The antennas are pointed directly at the Twin Mtns. – Dan Grenier

***The Verizon Satellite Earth Station, commonly known as the Andover Earth Station, is owned and operated by Verizon Network Services Group. The earth station has been federally licensed by the Federal Communications Commission (FCC) since the 1960s to operate Fixed Satellite Services (All earth stations that transmit satellite signals must have a telecommunications license for each antenna from the FCC.).***

***In November 2008, a representative from the earth station contacted the applicant to determine if the proposed project would be a physical obstruction of the signal path from any of the antennas and/or create electronic noise. The applicant provided information about the scope of the proposed project to the representative. Based on the information provided, the representative determined that the line of proposed turbines would not extend south of Partridge Peak. The representative further stated to the applicant that there appeared to be no conflict between the proposed project and the earth station.***

***Department staff contacted the same representative. This representative confirmed to the DEP that the proposed project is out of the line of transmittal sight from the antennas and that the proposed project will not create any concerns for the earth station.***

***The Twin Mountains are not within the scope of the proposed project and therefore any concern regarding the creation of radio interference from turbines on these mountains cannot be reviewed by the Department. However, the representative from the earth station stated that he is currently working with a wind project developer interested in these mountains to address areas of potential concerns if turbines were to be constructed on the Twin Mountains.***

### MORATORIUM REQUESTS

A moratorium should be enacted so that the public can be protected. – Dr. Albert Aniel, Thomas Ganley

***A moratorium is a term to describe a legally authorized suspension of an ongoing or planned activity. The DEP does not have legal authority to issue a moratorium. However, the***

***DEP may on occasion place a “hold” on a project with permission from an applicant in instances when a statutory deadline is approaching and the DEP needs additional time to acquire more information prior to issuing a licensing decision.***

#### TOURISM

Based on tourism, who will want to come here? – Christine Dube

***The Department does not have jurisdiction over the matter of tourism. Therefore, the Department does not have authority to use tourism as a basis for determining if permitting requirements have or have not been satisfied for any particular project.***

#### EXECUTIVE STATEMENTS

The Governor has a directive which entails 6000 MW of alternative energy/windpower by the year 2020. – Brad Blake

Where does the DEP stand on directives issued by the gang? – Ron Dube

***Directives, statements, and/or opinions expressed by the Governor are not reflective of nor associated with the Department’s overall procedures and practices for applying relevant environmental standards. The Department reviews every application in a technical and objective manner and is not in any manner influenced by the Governor’s overall professional or personal position on windpower.***

The Governor’s goal of 2700 MW conflicts with the SPO’s guidance on Regional Landscape Conservation in Maine. Please reconcile these conflicting goals as it applies to RHW and Western Maine. – Steve Thurston, Sarah and Philip Paquette

***The Governor’s goal for windpower and SPO’s publications are not regulatory criteria that the Department can use for determining whether permitting requirements have been met for a project. Any discrepancy between executive statements made by the Governor and SPO can only be resolved between these two parties.***